Pre-Systems Acquisition Activities

Life Cycle Data Management in Handbook 859

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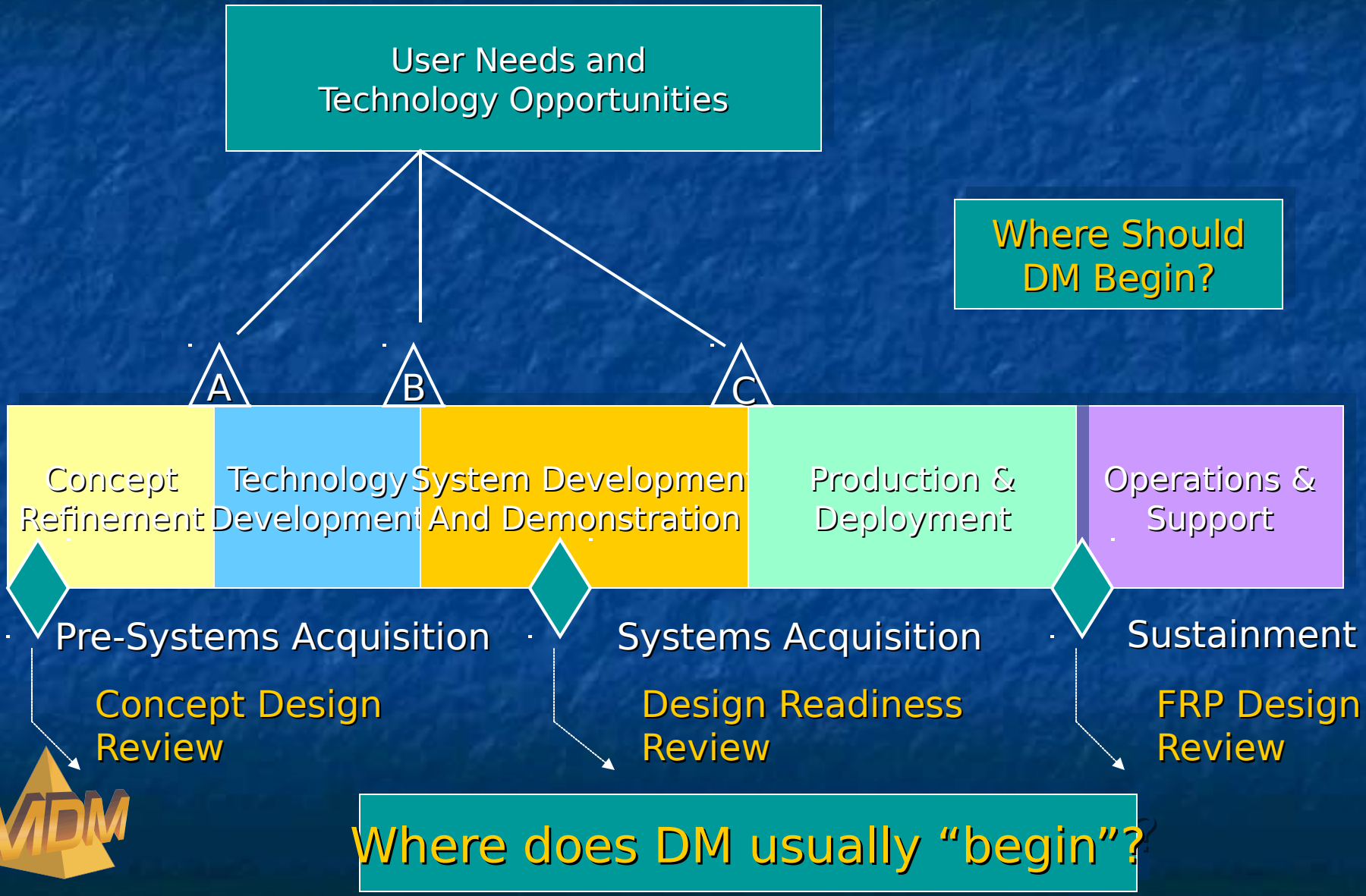
Defense Acquisition Management Framework
"Enabling Logistics for the 21st Century"



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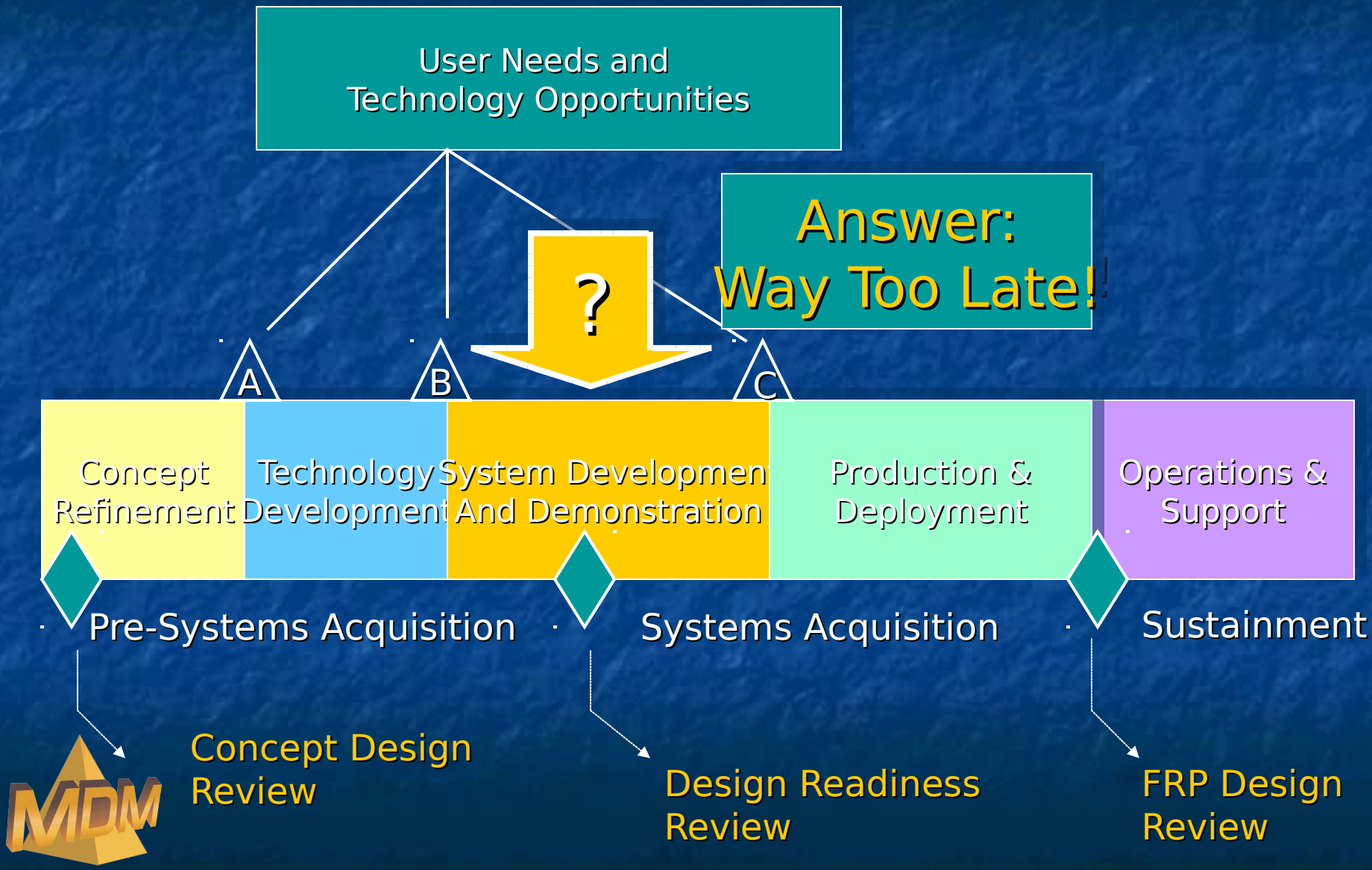


Why is that?

- Usual answers … and questions that I wish I could ask!
  - “too intrusive”
    - Really? How is it that documenting decisions and good planning are problems for you?
  - “too expensive”
    - We invest < 1-3% of total program dollars in DM, on a good day
  - “too soon”
    - And you wanted to wait until when?? Oh, yeah, right after the disaster!
  - “we’re not in production, yet”
    - No, and it’s highly likely that you won’t get there without better management of your process and your program!
    - And if you do, how are you going to know what you did to get to production?
  - “we haven’t made up our minds what we want to do, yet”
    - Don’t you need some traceability for your decisions and your requirements, as they evolve? Is this really an ad hoc program?
    - Don’t you want a defendable, supportable record of activities, plans, decisions, potential, and envisioned contractual outcomes?
  - “we’ll let our engineers/program managers/secretaries do DM”
    - Well, we’ve all seen how well THAT’s working …

Agenda

- What is Handbook 859?
  - A brief tour
- Questions to be answered
  - What is the landscape?
- Objectives of pre-acquisition activities
  - Focus
  - Questions
  - Sample value-added activities and contributions
- The Case for Early Intervention
- Aspects and elements of the DM Model

GEIA-859 was released on 4 August 2004
In ANSI progression, now, and should be ANSI-859, already

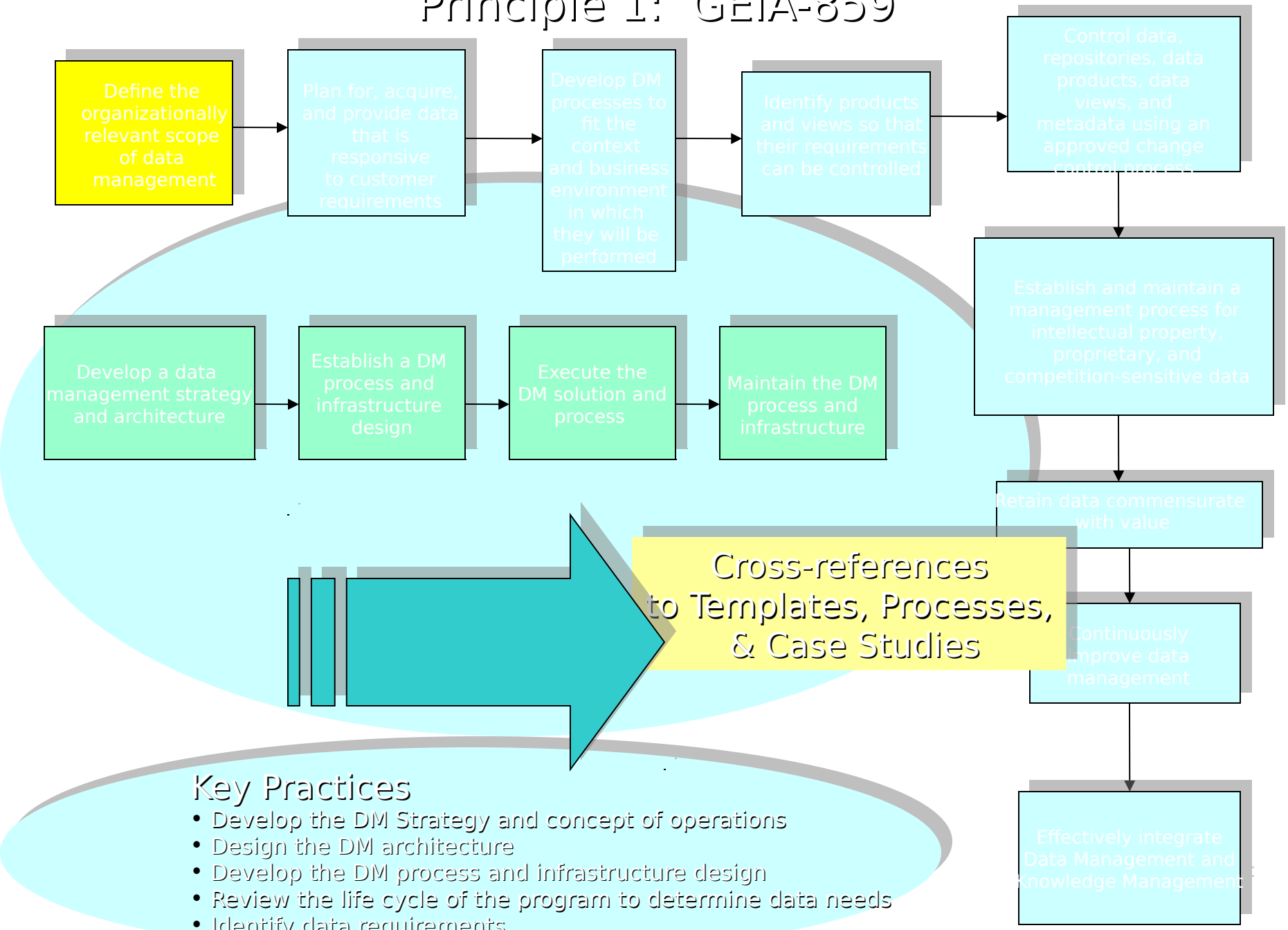
What is Handbook 859?

- Application guidance for ANSI-859
  - Industry Government Consensus Standard for Data Management
- Implements 9 essential and core principles for Data Management
  - Across sectors, across buyer and seller organizational boundaries
- Submitted to GEIA this week
  - 60-90 day approval cycle
    - Review, comment, resolution of comments, and voting by GEIA member companies

Look and Feel for Handbook 859
Content Overview

- Foreword
- Introduction
- How to Use the HB
- Intended Audience
- Resources
- Companion Documents
- Annexes
  - Intellectual Property, Acknowledgements, Continuous Improvement, Case Studies, Flow Templates, Glossary, References, Matrix from ANSI-859 to Handbook 859
- Full lifecycle DM
- Identification and Definition
- Acquisition and Preparation
- Data Asset Control
- Data Retention and Disposition
- Data Strategy
- Concept of Operations
- Data Preservation

Principle 1: GEIA-859


Define the organizationally relevant scope of data management
Plan for, acquire, and provide data that is responsive to customer requirements
Develop DM processes to fit the context and business environment in which they will be performed
Identify products and views so that their requirements can be controlled
Control data, repositories, data products, data views, and metadata using an approved change control process
Establish and maintain a management process for intellectual property, proprietary, and competition-sensitive data
Retain data commensurate with value
Continuously improve data management
Effectively integrate Data Management and Knowledge Management
Develop a data management strategy and architecture
Establish a DM process and infrastructure design
Execute the DM solution and process
Maintain the DM process and infrastructure
Cross-references to Templates, Processes, & Case Studies

Key Practices

- Develop the DM Strategy and concept of operations
- Design the DM architecture
- Develop the DM process and infrastructure design
- Review the life cycle of the program to determine data needs
- Identify data requirements

Questions Answered by Handbook 859 (Pre-acquisition Section)

- What is the scope of the DM process?
- What activities comprise the DM process?
- How is DM activity related to other functional activities and disciplines?
- What are the DM objectives for each phase of the program life cycle?
- What DM activities are performed in each phase? What decisions are made and what are the criteria for making them?
- What are the benefits derived from DM activities, and what are the risks if the activities are not performed?
- How can the DM process be measured, and how do the measurement metrics relate to DM objectives, and management objectives?

Scope of pre-RFP Activities

- Activities conducted very early in the DM lifecycle
  - Actually may precede the beginning of the program lifecycle
    - Example: requirements for a new capability
    - DM should capture and manage the documentation of initial requirements, significant changes in direction, and trade-offs that are made
- DM perspective ensures/provides data for later requirements traceability

DM Activities: 1) planning for DM across the lifecycle; and 2) Achieving and applying a Strategic DM perspective.

Sample Value-added DM Activities

- Pre-RFP
  - Data Strategy, CONOPS, data requirements
- Concept Refinement
  - Program decision criteria, provenance, outcomes
  - Technology trades analysis results
  - Down select/decision criteria
  - Requirements and objectives status/evolution
  - Emerging logistics/engineering issues
  - Test and evaluation issues
  - Modeling and simulation inputs, outputs, parameters, outcomes

Early ID, intervention, communication, and status tracking

Sample Value-added DM Activities, 2

- Technology Development
  - Analyses on technology evolution
  - EE, ME, human factors issues
  - Architecture design, trades
- System Development and Demonstration
  - SEMP, TEMP planning and element integration
  - Interface working group support
  - Flight test planning
    - Optics, telemetry, radar, quick-look data planning and support
    - Coordination with test ranges and facilities
- Production and Deployment
  - Spares and repairs issues
  - Next generation production decisions and challenges
  - Packages of data for review, decision, and communication

Note that the earlier the involvement, the more value is added

Sample Value-added DM Activities, 3

- Operations and Support
  - FMS data packages
  - Archival packages
  - Continued contract support (access, ...)
  - Logistics spares and repairs
  - Support to the item manager
  - Release management activities

These contributions are the equivalent of taking as aspirin a day to prevent heart attacks and strokes!

Early, sustained involvement assures that data is in place

Aggregate Benefits

- Acquisition strategy is enhanced
  - Data is identified for access only, for retrieval schedules and needs, and for acquisition priorities
  - Requirements are validated, tracked, and verified
    - Product data as well as supporting business data
    - Intellectual property considerations are identified early on
  - Down-select teams
- Program management tasks are supported
  - Decisions, actions tracked
  - Provenance established
- Logistics support strategy is provisioned correctly
  - Appropriate data is identified
    - COTS planning
    - Proper data is acquired, if access is not sufficient
    - Costly contract modifications are avoided* [~2M, generally]
- Post-contract issues are addressed
  - Data marking, data rights
  - Records management
  - Product release management
  - Contractual requirements are supported

* This doesn't count such aspects as Intellectual property and data rights "changes"

New Perspectives

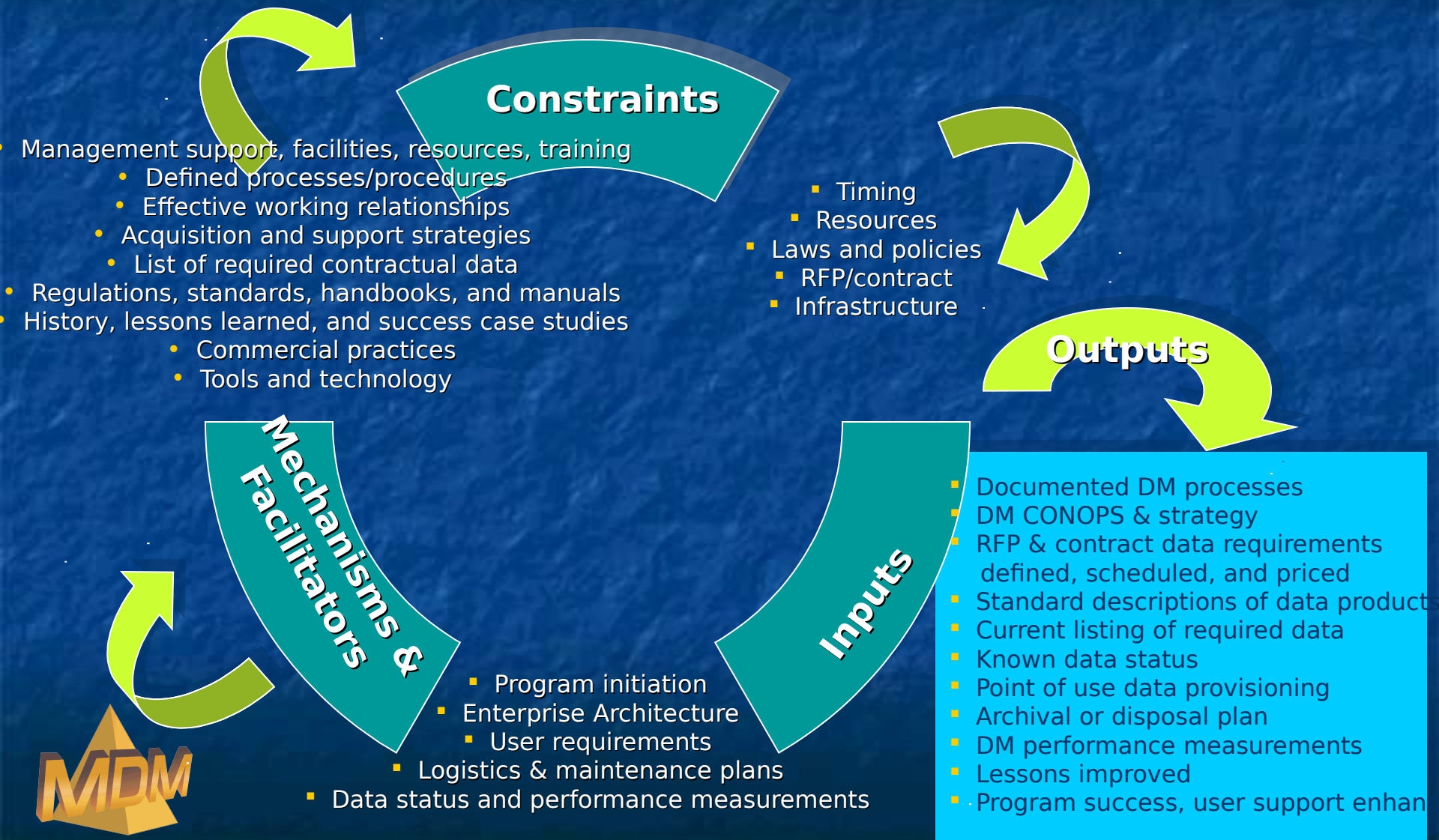
- Data acquisition or information acquisition?
  - They are different things
  - They are treated differently by data providers
  - They are valued, considered, and sold at radically different prices
- “Insight” management as opposed to “oversight” management
- Expectations are clearer, outcomes are structured and pre-ordained

Isn’t this what Logistics is all about?

Objectives of the Pre-Acquisition Phase, for DM

- Focus: types of data to be generated, accessed, acquired, exchanged (inputs and outputs)
- Focus: the life cycle of the data, the system being designed, and the uses to which data will be put
- Focus: sizing the solution
- Focus: identifying existing or emerging constraints, facilitators, roadblocks, inconsistencies, redundancies

The DM Process



Characteristics of the DM Process Model

- Inputs
  - Information needed to initiate and perform the process
- Constraints
  - Factors or information which inhibit, condition, or limit the process
- Facilitators
  - Information, tools, methods, and technologies which enable or enhance the DM process
- Outputs
  - Results derived from the process, and the information provided by the process, itself

Elements of the Top-Level DM Activities Model

- Laws and Regulations
- RFP and contract
- Acquisition and support strategies
- User requirements
- Provider recommendations
- DM planning, procedures, and training
- Data use metrics
- CONOPS/Data Strategy
- Data requirements to be placed on the contract
- Data provider proposals
- Data Management policy, procedures, and training
- Data provider submittals
- Product data
- Requests for data
- Access rules
- Negotiated and revised list of required data
- Data status
- Data provided to the point of use
- Availability for access
- Archival and disposal

Characteristics of the DM End Process

- Integrates DM process and supporting system
- Captures and manages configurable items which comprise the technical baseline
- Correlates and provides traceability among requirements, design, decisions, and rationale
- Supports configuration management procedures
- Serves as a ready reference for the development team
- Uses common and compatible information systems,

Translation?

Broad Scope for DM

- Relates to the complete program life cycle
  - Systems engineering, program management, configuration management, business management, operational support, retention, archival
- Embraces use of common buyer and seller data formats, when and where feasible
- Reflects seamless integration of DM with all other functional activities and disciplines
- Extends to true “management of data” to create and provide a structure for insight management

Setting the Stage for Effective DM

- USG and Industry are moving to more concurrent acquisition process using Integrated Product Team management
  - This requires timely, accurate, cross-functional access to data
  - The IT infrastructure is essentially “ready”
    - DM processes and scope have lagged behind technology
- Traditional DM processes are still valid
  - New paradigmatic shift to “digital” format rather than paper-based products, and “access” rather than “acquire”
- Benefits and ROI are easily discerned
  - Better trade-off decisions
  - Problem identification comes much earlier in the life cycle and the process
  - Cycle times are reduced for decisions, information processing
  - Overhead costs eliminated or reduced for receiving, storing, and processing hard copy documents and product data

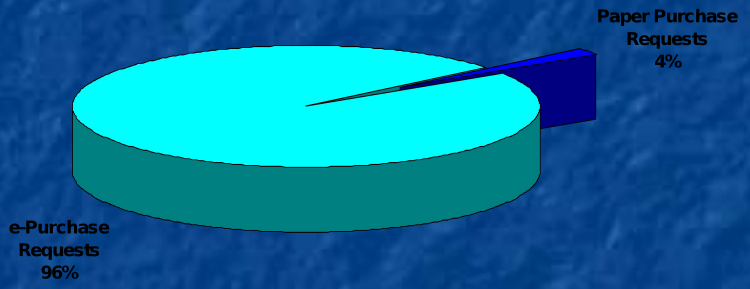
Outcomes Gained

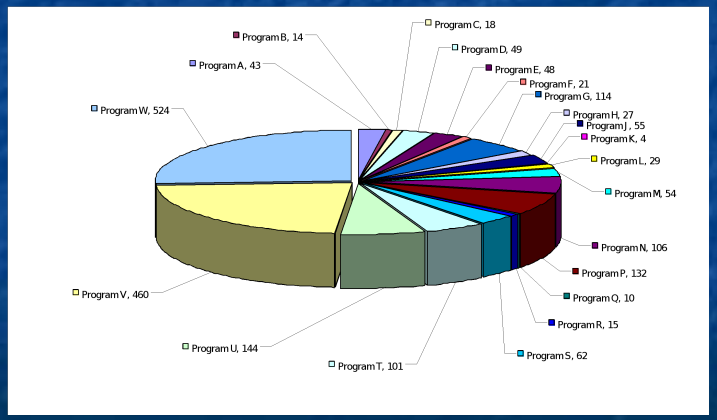
- Better trade off decision support
- Enhanced communication between data providers and data acquirers
- Earlier identification of problem areas
- Decreased cycle times for decisions and information processing
- Elimination of overhead costs of receiving, storing, and processing hard copy documents

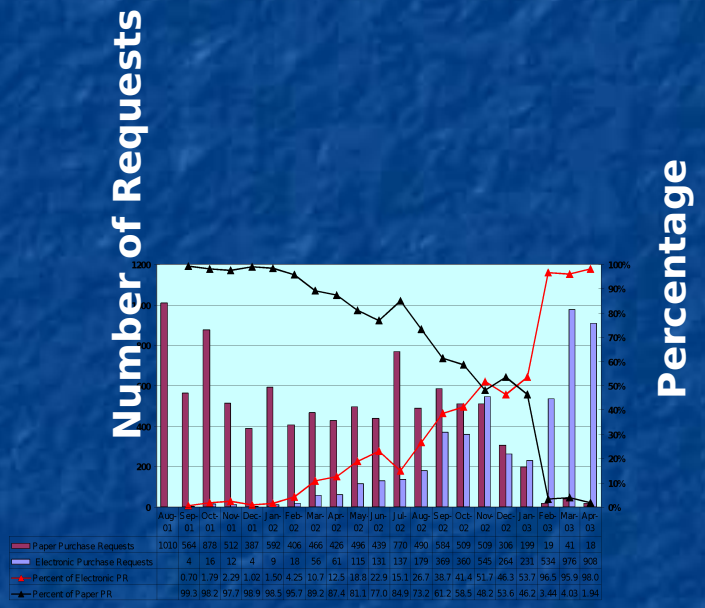
Sample DM Metrics

- On-time deliveries by year
- Deliverables delinquencies
  - Root process drivers by year, by program
- Classified cabinets eliminated by year, by program
  - Contract retirement, archival, retention schedules
- Unclassified documents scanned for use
  - Search time reduced or eliminated, offsite and onsite
- Electronic data interchange
  - Enabled by year, by program
- Library/website hits and patron visits
- Average DM funding by product line, by program, by year
- Aggregate DM core process consistency and improvements by year, by program
- Class II reasons for change (requirements, optics, SW, tech data, supportability, parts obsolescence) by program, by year
- On-time changes, YTD
- Class II change trend
- Data errors found by EDS
- Paper purchase requests versus electronic purchase requests
- Paper or electronic TDPs

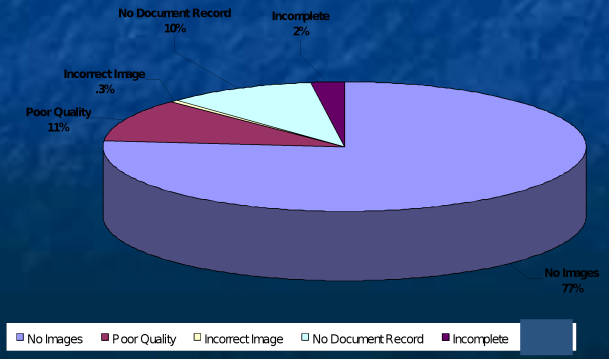
DM Metrics for Management







	Aug-01	Sep-01	Oct-01	Nov-01	Dec-01	Jan-02	Feb-02	Mar-02	Apr-02	May-02	Jun-02	Jul-02	Aug-02	Sep-02	Oct-02	Nov-02	Dec-02	Jan-03	Feb-03	Mar-03	Apr-03
Paper Purchase Requests	1010	564	878	512	387	592	406	466	426	496	439	770	490	584	509	509	306	199	19	41	18
Electronic Purchase Requests		4	16	12	4	9	18	56	61	115	131	137	179	369	360	545	264	231	534	976	908
Percent of Electronic PR		0.70	1.79	2.29	1.02	1.50	4.25	10.7	12.5	18.8	22.9	15.1	26.7	38.7	41.4	51.7	46.3	53.7	96.5	95.9	98.0
Percent of Paper PR		99.3	98.2	97.7	98.9	98.5	95.7	89.2	87.4	81.1	77.0	84.9	73.2	61.2	58.5	48.2	53.6	46.2	3.44	4.03	1.94



Next: Acquisition and Preparation

- The right amount of data will be bought, delivered, or accessed
- The best data to support decision making and other customer functions will be available when needed
- Timing of delivery will be optimized
- Statements of work and objectives are more easily written, clearer, and resulting in fewer unpleasant surprises for the buyer and the supplier
- Data products will be discoverable, and when retrieved, will be associated with other relevant data products, product data, and views
- Data products and views will have metadata that help to ensure appropriate use and re-use
- It will be possible to recreate the set of data products and views in use at a given point in time

Summary

- Lots has happened in DM
  - DM's not your father's Oldsmobile, anymore
- The benefits gained from the investment in the solution don't even compare
- ANSI-859 and Handbook 859 are ready to assist in better DM for you and your organization
- The DM panel has much more ahead
  - XML business objects modeling
  - Automation of DM processes inside PDM tools
  - DAU course modules for 13 career fields
    - Available for industry as well as for government